MIDAS

Pocket Guide 2012

MIDAS the professionals' choice

Robbie Williams, Nigel Taylor, and James Guthrie with Britannia Row's 105 channels of MIDAS used to mix "THE WALL" concerts by Pink Floyd.

Forty Years of Innovation and Leadership

MIDAS have a long history of Innovation and leadership in the world of audio mixing consoles, which continues to this day.

Originally formed in 1970 by Jeff Byers and Charles Brooke, Jeff became fascinated by the concept of improving and refining professional audio systems, and so MIDAS went on to develop the first fully integrated modular audio system, comprising consoles, crossovers, amplifiers and speaker systems in conjunction with Dave Martin, which became the calibrated MIDAS/Martin system of the 1970's.

The first MIDAS mixer to achieve major success was the PR04, a modular console, and forerunner to the XL3, the first MIDAS to feature VCA groups, and the world's first truly dual-purpose console. In 1990, this innovation changed the way the a generation of engineers approached the art of mixing, opened new creative possibilities and set the scene for the greatest analogue console ever built, the XL4.

The XL4 set the benchmark for the next decade. Audio engineers were amazed at the sheer depth and scope of what they were able to achieve with the unbeatable combination of the XL4's audio performance and comprehensive moving-fader automation. Many elements of this legendary console are still available to today's engineers in the current range of MIDAS digital mixing systems.

Always seeking to redefine the boundaries of audio performance and flexibility, the turn of the century saw the launch of the ubiquitous Heritage 3000. MIDAS employed the ultimate distillation of design and experience into creating the perfect roadworthy touring console. The Heritage 2000 and the theatre orientated Heritage 1000 complete the line up.

Innovation continued into the new millennium with the Legend 3000, the world's first Tri-purpose console, and the Verona and Siena, which revitalized and redefined the market for the medium format console.

Then, in 2006, Digital went MIDAS.

When the MIDAS XL8 was launched, it set new standards for audio quality, ease of use, power, flexibility, and creative potential. No other live digital audio console can compete with the sample-synchronous audio performance, expandable network topology, and sheer ease of use which are the trademarks of all MIDAS digital systems. The XL8 has become the system of choice for prestigious installations, major touring artistes, Theatres and concert venues the world over, including many unique international events where compromise is not an option.

PRO6 strengthened MIDAS' digital range in 2008, which shares the same sample synchronised audio performance as the XL8 and its extensive networked audio system. The PRO6 is a common sight at front of house and monitor positions in concert touring as well as global events. The PRO3 and PRO9 have since been added, offering a choice from 48 up to 88 simultaneous mixed inputs allowing even more touring riders and professional installations to take advantage of MIDAS' digital features.

2011 saw the introduction of the PRO2 and PRO2C offering all the advantages of the large format PROs in a compact footprint. However MIDAS have continued to innovate and introduced the MCA an advanced navigation system allowing increased speed of workflow. With the introduction of the PRO1 saw MIDAS' first ever light weight all aluminium chassis.

All MIDAS digital consoles feature multiple types of channel EQ and dynamics plus an extensive set of fully time aligned and dynamically re-patchable effects processing devices. The comprehensive theatre grade scene automation system can also dynamically reconfigure 800+ inputs and outputs on a scene by scene basis.

Venice*F* brought a twist to the pro audio market with Digi-log. With up to a 32 x 32 bi-directional FireWire* interface Venice*F* forms a platform for an integrated audio mixing, recording and processing package. Venice*U* continued the Digi-log theme with an 8 x 8 USB interface.

* FireWire and the FireWire symbol are trademarks of Apple Inc., registered in the US and other countries. The FireWire logo is a trademark of Apple Inc.

PRO6
MIDAS

MIDAS Digital Sound Quality

The MIDAS reputation for fantastic audio quality has evolved over 40 years of development and research. By designing the best mic pre's, equalisation and using the superior components, MIDAS has carried this tradition into the digital realm. Adding the best converters and custom processing algorithm to the mix MIDAS, takes audio quality to another level. In addition MIDAS digital systems are the only live sound systems in the world to have a comprehensive and automatic latency management system. Which, in addition to managing all internal routing and processing latency, also includes compensation for external analogue inserts. This means that all audio samples are synchronised before summing, resulting in absolute phase coherency at all outputs.

MIDAS digital feels, as well as sounds superb. All the variable controls on the console are genuine analogue high precision potentiometers, not mechanical encoders. These access the FPGA-DSP engine through precision instrumentation A-D converters and MIDAS' custom interpolation algorithms. This means that as well as all audio, all operator input is fully interpolated to ensure a linear, analogue-style, silky smooth "feel" to your mix.

The MIDAS microphone pre-amp is the one by which all others are judged. Still built from discrete components, and still based on the designs which were so successful in the legendary MIDAS analogue consoles such as the XL3, XL4 and Heritage, the current expressions in the XL8 range and PRO Series sound better than ever. Whether you want pristine, transparent reproduction, or that renowned MIDAS warmth and colouration, MIDAS' dual (analogue and digital) gain stages enable you to shape the mic amps' character according to your own preference.

A major problem affecting many digital consoles is a lack of attention to delay management. All digital processing takes time to run – typically just a few samples, but never zero. ADCs and DACs have much bigger delays (typically a few milliseconds) so if analogue insert points are used, the channel in question will be delayed significantly relative to the others

Mix engineers working on analogue consoles routinely combine signals with different signal paths and processing and expect to do the same with digital. On many current digital consoles, combining signals in this way leads to the summing of signals that are in effect partly out of phase. This causes undesirable "comb filtering" effects, where specific frequencies are cancelled out completely. All MIDAS digital consoles have comprehensive automatic time alignment to correct any path related delays. Plus the additional latency introduced by the A to D conversion on the analogue inserts is also automatically compensated.

MIDAS digital allows the I/O and DSP units to be freely distributed around multiple locations. In particular I/O units can be placed exactly where they are needed – on the stage, around the auditorium, at FOH or remotely in a broadcast truck. MIDAS' digital audio network is easily configurable to route signals from where and by when they are needed since the patching is done a scene-by-scene basis.

Every transition of a network adds delay. MIDAS networks have only 70 micro-seconds of latency per hop so even a multi-hop routing has negligible aggregate delay (latency) making it perfect for in-ear monitoring. All inputs and all outputs are time-aligned to sample accuracy, no matter where they are in the network or how they are routed. This is another major contributor to the performance of a MIDAS digital console and that magical MIDAS sound.

input select
KIT
OH'S
BRASS
KEYS
GTRS
STRNG
BV'S
STAR
FX
INTRO
VERSE
HIDE
SOLO
END
POPS
population groups
vca
vca
vca
vca
mute safe
fader safe
SOLO
level
1-8
9-16
mixes to fader / pan

MIDAS Digital Audio Systems

VCAs, MCAs and POPulation Groups
With the advent of digital technology consoles channel counts and processing features have grown to a point where it is just not practical to have all controls physically available at the same time. Additionally the logistical advantages of smaller control surfaces are attractive. MIDAS' unique approach to solving this problem is to mirror the natural work flow used by sound engineers and to provide control and supporting feedback of system status at all levels, from the highest overview to the finest detail. This encourages the development of a mental picture, or "Mind Map", of the whole system even though at times focus may be on one or two specific functions.

For example: as a default channel faders are not layered but scrolled; so the console faders act as a window onto the available channels in the system and allow you to think of them as a simple linear progression, like on an analogue console or a channel list, rather then having to remember which layer things are on. Unlike analogue consoles in this way the console comes to you rather then the other way around. But this is only the beginning.

At the heart of any MIDAS control centre are the VCA faders that provide primary mix control of multiple channels (typically grouped into musical clusters by sound engineers). A unique innovation in this established mixing approach is the ability to access all the channel faders belonging to any of the VCA groups at the press of a switch: again the channels come to you rather than having to go looking for them. VCA groups can be Solo'd and Muted.

If you think of the VCA faders as if they were each containers for all the channels they control then finding channels becomes a natural and easy task. This method is further expanded through the provision of user customised POP (POPulation) groups each of which can contain any combination of channels that you want to accesses instantly at the press of a switch. Rather like a VCA without a fader.

Advanced Navigation Modes
There are three modes of channel navigation. These options make it possible for an engineer to easily and efficiently mix a large number of inputs on a compact control surface. When the FLIP button is engaged, selecting an output will flip the input faders to become the input channel send levels to the selected output.

When the GEQ NAVIGATION button is engaged, selecting an output which has a GEQ assigned, will present the GEQ on the VCA faders. Scrolling the VCA faders left and right will provide access to all 31 GEQ faders. If FADER FLIP is also engaged, the input channel faders will become the contributions to the selected mix. If COLLAPSED FLIP is selected, the operator will only be presented with input channels which are sending to that mix.

When the FX NAVIGATION button is engaged, selecting an output which is patched to an internal FX processor, will deploy that FX processor on the screen, and map the ASSIGNABLE CONTROLS to it. If FADER FLIP is also engaged, the input channel faders will become the contributions to the FX processor. If COLLAPSED FLIP is selected, the operator will only be presented with input channels which are sending to that FX processor.

If the MCA button is engaged, when an output (mix) is selected, the MCA faders for that output are deployed on the VCA fader bank. When in Advanced navigation mode and MCA navigation is engaged, the MCA faders control the contributions of their members only to the currently selected buss. This is a unique and powerful mixing tool, which puts MIDAS in a class of it's own for innovation and usability.

This makes working with the console as simple as requirements dictate, or as deep and complex as a user desires. To introduce the concept, think of multilayered 3-D VCAs, or a mixing console with a bank of VCAs for each input! Both are valid starting points.

Hide/show unassigned channels when flipped. When in this mode, and the FLIP button is engaged, selecting an output flips the input faders to become the input channel send levels to the selected output. The console will only populate with the input channels which are assigned to the selected output.

Effects
Scene3
500 mS
MATRIX
MIXER

This work flow approach is applied to every area of the control surface ensuring ease of use and appropriately fast access to all controls.

To help further improve the "Mind Map" live sound engineers have typically used colour when navigating mixing consoles by applying different coloured adhesive tape and swapping coloured fader knobs to help make console navigation faster and more intuitive. MIDAS have taken this established principle of channel recognition and applied it to VCA, MCA and POPulation groups with assignable colour-coding and digital write on buttons.

Effects Processing
MIDAS digital consoles include an ever expanding library of effects processing devices. The range includes:

- KLARK TEKNIK DN780 Multi FX processor
- MULTI-BAND COMPRESSOR
- STEREO PITCH SHIFTER
- KLARK TEKNIK Square ONE 8-channel dynamics processor
- KLARK TEKNIK DN370 Graphic EQ
- STEREO DELAY with precision tap tempo
- STEREO FLANGER
- STEREO PHASER

The latest MIDAS Generation-II latency-compensated effects plug-ins includes:

AMBIENCE REVERB adds warmth and depth to source material without creating the more obvious artefacts commonly associated with artificial reverbs. The Ambience reverb creates small room acoustic spaces using diffuse early reflections with the additional flexibility of separate reverb tail level and decay controls.

CHAMBER REVERB emulates the rich sound of echo chambers found in early recording studios. This is characterised by a rapid build-up of reflection density within a small to medium sized space coupled with a relatively colourless and smooth decay.

HALL REVERB simulates the response of a real concert hall, adding a sense of space to the source material with less initial density than a chamber reverb. The slower build-up of reflections and generally longer decay times associated with this type of reverb allows for increased clarity of the source whilst offering a richer, lusher overall sound which is less dense in character.

PLATE REVERB simulates the actual plate reverb devices that were used in the classic recording studios in the 1960's and 1970's. These were literally a plate of metal which was suspended under tension with a transducer, to transmit audio to the plate whilst two or more contact microphones were attached to the plate to pick up the results. The plate reverb has a very rapid build-up of reflections and as a result is very dense initially with a fairly smooth decay characteristic, for this reason it is typically the first reverb choice for percussion instruments.

VINTAGE ROOM REVERB provides an incredibly natural sounding reverb in the style of the earliest digital reverberators that became popular during the 1980's. Its strength is in recreating natural acoustic ambiences with a very warm and dense characteristic without sounding particularly artificial.

DUAL STEREO DELAY provides a simple, concise delay device, with the advantage of having two stereo units in one effect device rack space. Delay times can be set individually from the GUI, or by using the consoles GLOBAL TAP BUTTON.

DUAL STEREO CHORUS is an emulation of a classic chorus effect with the advantage of having two separate stereo units in only one effect device rack space. This lush chorus effect is achieved by taking the source signal and combining it with one or more short delayed copies of the same signal that have slight deviations in pitch.

MATRIX MIXER allows any combination of the eight input signals to be routed to any combination of the eight outputs. This provides a means of generating additional outputs on any MIDAS digital console. Delay and Phase can be adjusted on both inputs and outputs with an additional four band parametric EQ available on each output.

PRO6

DYNAMIC EQ can be configured either as a stereo device with four filters per channel, or two stereo devices with two filters per channel, or four stereo devices with one filter per channel. Dynamic EQ can be programmed to either boost or cut selected frequencies depending upon the programme amplitude. Filters are fully parametric or can be configured as shelving types. The dynamic EQ GUI provides detailed real-time visual feedback of the audio processing being applied.

The effects devices are presented as a virtual rack of units. XL8 can have up to 16 multi-channel devices (plus 32 Graphic EQs), PRO Series has 6 or 8 devices depending on model (plus Graphic EQs). The effects device types can be changed and/or re-patched on a scene by scene basis.

There are many patching options for the effects processors and graphic EQs. Some of these are:

- Assign to any insert send/return
- Assign to any network input or output
- Assign FX out to aux return
- Assign FX in to aux send (post fade)
- Assign FX out to buss direct in
- Assign FX in to channel direct out

The MIDAS' effects and dynamics are incorporated within the systems automatic delay management system, so that wherever they are patched, the audio will be absolutely phase-coherent when summed into the mix.

Graphic EQs

You can have up to 36 1/3 octave KLARK TEKNIK GEQs on a PRO series and up to 51 on an XL8, which can be patched into any output or insert point. The Graphic EQs can be controlled by a KLARK TEKNIK DN9331 Rapide fader remote which is standard on the XL8 and an option on the PRO Series or from controls on the console surface. The STS system allows the use of a select button on a Send to automatically pause the Rapide motor faders to move to settings for that send.

Preference Screen

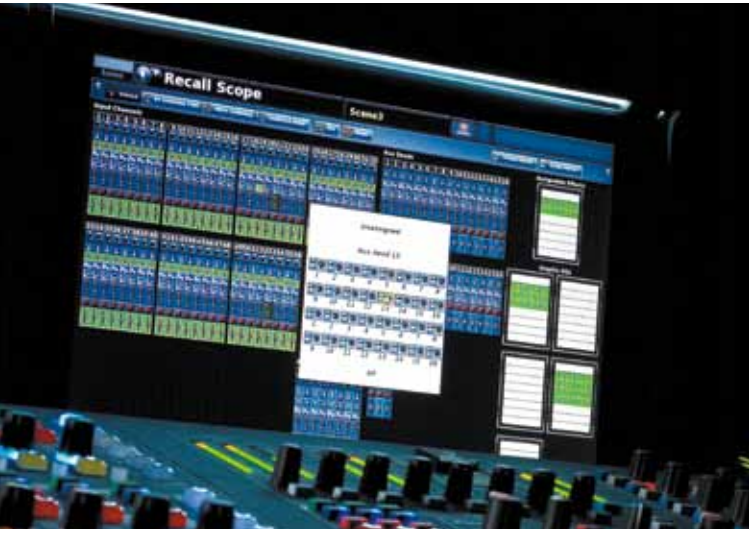
A brand-new Preferences screen layout with many new options means that all MIDAS digital consoles can be "customised" to the operators' personal predilections.

The new "console overview" screen for PRO3, 6 and 9 provides at-a-glance reporting of the entire systems audio status. Other new Generation-II features include aux pan linking, global pre/post selection and per-channel viewing of VCA and POP group membership.

MIDAS iPad App

The final component of MIDAS Generation-II software is an onboard IP server which permits remote control of any MIDAS digital console wirelessly from an Apple iPad, via any standard Ethernet-equipped wireless router.

Automation
17:04:18


Recall Scope

Show Editor

Automation
All MIDAS digital consoles are purpose-designed for easy, instant-access to all key functions when mixing, however, should the operator require the console to manage mundane repetitive tasks, or control complex and wide-reaching changes during a performance, the onboard automation system can handle all requirements with ease.

Each show file within the consoles memory can contain many hundreds of "scenes" which can be individually recalled the instant their settings are required. Scenes can be recalled instantly, or with a configurable crossfade time, for more subtle changes, or by programming user-configurable crossfade "groups" complex timed events can be prepared with instant user-intervention if required including manual control of crossfades.

Each scene contains every parameter on the system, including all audio parameters, network routing, console configuration, FX type, routing and settings, even VCA and POP group deployment and screen brightness can be pre-programmed into a scene recall!

MIDI or GPIO (contact closure) ports, provide control of external devices or allow the console to respond to external prompts, permitting many external 3rd. party devices to be incorporated into the MIDAS automation system.

MIDI, GPIO, and internal (crossfade and text note)"events" all have a comprehensive palette of options which include all the usual MIDI parameters, plus the ability to assign time delays or offsets to the implementation of the programmed event.

The dedicated automation GUI displays all scenes programmed into the show, and provides visual feedback for all automation events, an area for text notes, and the facility to quickly re-order the scenes, should the set-list or running order change at the last second!

For those times when a well-rehearsed and programmed show does change at the last second, the console has dedicated hardware controls for every channel enabling the operator to "safe" any parameter from automation control should the need arise. Software control of scene-specific automation "scope" is also provided, as well as the ability to "cut and paste" any real-time parameter changes to subsequent scenes via the onboard SHOW EDITOR.

Redundancy in MIDAS Digital Systems
MIDAS products are renowned for their reliability, nevertheless component failures can occur in anyone's product at any time. MIDAS mixing systems are regularly used on events where a loss of audio would be catastrophic. At MIDAS we have gone to great lengths to build redundancy into our digital systems to minimise or avoid completely the impact of such problems.

The flagship XL8 uses a combination of dual redundancy and (n+1) redundancy schemes in such a way that no single failure in the system can stop the product operating. One example of dual redundancy is the complete duplication of all the audio network and router devices. An example of (n+1) redundancy is the DSP engine where nine units are active and the tenth one is an auto-deployed redundant unit.

A particular case in point is the main control software and associated processor which is often a part of a digital mixer which will stop the audio if it fails or the software crashes. The Master Controller on the MIDAS XL8 and PRO3, 6 and 9 consoles are fully dual redundant. The backup unit is always running in the background and is kept constantly up to date with all audio and control parameters, enabling a completely seamless swap should a failure occur.

Patching
In19 on LineIO 1

Patching
MIDAS digital systems are much more than a "mixer" – they are complete digital audio distribution networks.

The XL8 has a network capacity of 432 inputs and 432 outputs, the PRO3, 6, and 9 all have capacities of 288 inputs and 294 outputs, PRO2 and PRO2C offer up to 156 inputs and 166 outputs and the PRO1 has up to 100 inputs and 102 outputs. All of these network connections can be patched and routed independently of the audio passing through the "mixer". Any correctly-directioned connector can be mapped to any node on the mixer, and any correctly-directioned node elsewhere on the network, simultaneously! Modular I/O devices (DL451, DL351 and PRO3/6/9 control centres) feature a modular, user-configurable card-based system which permits any combination of analogue and/or digital inputs and/or outputs to be deployed depending upon the requirements of the event.

The patching GUI is presented to the user in a highly visual, easily understood pictorial format, enabling quick, easy operation and comprehension of a large and potentially complex audio network. The format, configuration, routing and patching of the entire network can be re-configured instantaneously on a scene-by-scene basis by using the consoles automation system.

Areas A and B
MIDAS' digital control surfaces can be divided into two areas, Area A and Area B facilitating dual operator use on XL8, PRO3, 6 and 9. The input channel area on the far right of the surface (3 channels on PRO2 and PRO2C, 4 channels on a PRO3, 6 and 9 and 8 channels on an XL8) can be designated as Area B. The input control channels on the right-hand side of the Control Centre can now be used independently of those on the left.

VCA and POPulation groups can be pre-selected to populate either Area A or B. This means a group of inputs can populate different areas of the surface. The engineer brings the required inputs to their local work surface, where they are quickly and easily identified and changes implemented.

There are two independent stereo solo busses available. Any input or output channel can be assigned to either monitor buss. Allowing on XL8, PRO3, 6 and 9, two operators to work simultaneously or for stage monitor and in ear monitor systems to be separated.

output
push
Ethernet tunnel
external

CAT5e
optical
CAT5e
AES50

output 8
check
mute
output 7
mute
output 6
mute
MIDI
in
out
thru
GPIO

Third Party System Integration

The MIDAS XL8 range and PRO Series systems incorporate several special features to aid real world integration with other important sub-systems.

The MIDAS digital snakes (HyperMAC), both CAT-5e and Fibre Optic versions, carry embedded control signals for general usage. Signals carried include standard Ethernet traffic, MIDI messages and GPIO (general purpose input and output signalling). This is a great advantage since it avoids extra cables, extends the range of, for example MIDI, a long way beyond normal limits and provides a free Ethernet range extension.

The Ethernet tunnel provides a 10Mbit/sec standard Ethernet connection from an Ethercon RJ45 connector on the control surface to a similar connector on the stage router unit (DL461, DL361) for use by third parties. Applications include carrying control signals from a PC or Mac at FOH to a radio mic receiver rack on stage and similarly, control signals from a PC or Mac to a system controller on stage. External standard Ethernet network hubs can be used to connect many different systems together via the MIDAS snake, which also provides redundancy in case of cable damage.

MIDI messages and GPIO (contact closure) signals can be sent and received by the MIDAS Console Automation System to local connectors at the console position and remotely to MIDAS I/O devices which can be 500m away.

The XL8 and PRO3, 6 and 9 control surfaces incorporate a KVM switch (Keyboard – Video – Mouse). This switch allows one screen on the control surface plus the keyboard and trackball to be switched to one of three external computer connectors. This is a great way of reducing "clutter" at the control surface position. A control surface screen, keyboard and trackball can be used to control up to three other systems where the computers are placed out of harms way. These external systems, such as ProTools*, Waves* Multi-Rack, Shure* UHF-R radio mics and Dolby Lake* System Controllers, then appear on a MIDAS control surface screen and are controlled by the surface keyboard and trackball.

As described above the Ethernet tunnel can then be used to pass the Ethernet messages from these computers to the devices they are controlling on stage via the MIDAS snake. As an extra refinement the automation system can be used to communicate with external systems via MIDI thereby integrating these systems into the MIDAS scene automation.

* All trademarks acknowledged.

XL8

XL8 Live Performance Systems

Introduction

Digital goes MIDAS. The industry held its collective breath when the XL8 was unveiled in 2006 as this was not merely another digital mixing console. It brought audio control and distribution, in fact all aspects of the live performance to one single control centre. Being a MIDAS it coupled sound quality, flexibility and reliability with an ease and familiarity of use unrivalled by other digital control surfaces.

The XL8 has been designed so the engineer doesn't have to think in terms of numbers, pages or layers. The user navigates the system and identifies channels by colours and groupings, which they themselves create. This method allows an individualised approach to mixing, rather than working within hardware-dictated numerical limitations.

Overview:

- Five "Daylight Visible" Screens with 3-way KVM switch
- 432 inputs and 432 outputs connectivity
- Direct Point to Point routing, any in to any out with metering
- 4 I/O box alternatives: distributable I/O with 600m range
- 112 mix inputs onto 51 busses
- 12 VCAs
- 8 POPulation Groups
- 4 EQ types and 5 dynamics styles as standard
- 16 effects devices
- Up to 51 1/3 octave graphic EQs (37 standard)
- Configurable "Area B" for dual operators
- 2 independent stereo solo systems
- 55 P&G Motorised Faders
- Surround panning including 5.1, Quad and LCRS
- 500m bi-directional 192+192 channel redundant snake
- All I/O units connected by AES50 bi-directional 24+24 channel CAT-5e
- All I/O can be 100 metres from Front of House or Stage router positions
- 8 AES50 Ports on the Control Centre and 10 on stage router (DL461) for I/O expansion
- Scene by scene re-assignment of routing and effects
- All DSP processing, AD/DA conversion and networked audio is at 96 kHz sample rate
- All DSP processing, AD/DA conversion and networked audio is fully and automatically time aligned
- Extensive and comprehensive scene automation system
- Show files are fully compatible across software releases and all MIDAS digital consoles
- MIDI and GPIO automated events at FOH and stage
- Ethernet tunnel provided for 3rd part communications through snake
- Dual-Redundant Linux Control Computers
- Dual-redundant audio networks
- DSP, I/O and controls redundancy
- Single and dual (for FOH + monitors) versions
- Three year factory warranty

Accessories:

- KLARK TEKNIK DN9696 96 track High Resolution Audio Recorder
- KLARK TEKNIK DN9650 Network Bridge (MADI, Dante, Aviom, Ethersound, CobraNet)

XL8 Live Performance System

Touring

The touring version of the XL8 Live Performance System has been especially configured for high profile concerts, festivals and major events. Main inputs are connected via DL431 remote control 5-way mic splitters which have three fully independent non-interacting mic pres per input. Two of these are remote controllable (2.5dB steps) and the third is fixed gain, feeding out as analogue via isolating transformers. The two remote control mic pres separately feed both MIDAS digital networks and analogue outputs. The DL431 units can be shared by the FOH and monitor XL8 consoles providing a cost effective system but still retaining independent analogue mic pre remote gain control for the two engineers. Both MIDAS digital network connections are duplicated for redundancy and the DL431 also has dual-redundant power supplies.

Audio outputs are routed to any of the 5 supplied DL451 configurable I/O units, each of which can have up to 24 outputs and 24 inputs depending on I/O card options fitted. Any DL451 (and DL431) unit can be up to 100m from either the stage router or FOH location. The stage router can be up to 500m from FOH. All of these connections are dual redundant, as are the network routers.

XL8 Touring Configuration:

- Five "Daylight Visible" Screens with 3-way KVM switch
- 432 inputs and 432 outputs connectivity
- 112 mix inputs onto 51 busses
- 12 VCAs
- 8 POPulation Groups
- 16 effects devices
- Up to 51 KLARK TEKNIK EQs with DN9331 Rapide control
- Configurable "Area B"
- 150m bi-directional 192+192 channel redundant fibre optic snake (max 500m)
- Local I/O: 1 x DL451 Up to 24 in / 24 out configurable I/O (3 card slots)
- Stage I/O: 4 x DL451 Up to 24 in / 24 out configurable I/O (3 card slots)
  4 x DL431 24 in 5 way split: fixed configuration
  2 x DL461 Audio System Signal Router
- KLARK TEKNIK DN9331 Rapide Graphic Controller as standard
- Control centre supplied in flight case

Additional I/O Unit Options:

- DL251 48 in / 16 out fixed configuration I/O
- DL252 16 in / 48 out fixed configuration I/O
- DL351 Up to 64 in / 64 out configurable I/O (8 card slots)

I/O Card Options:

- DL441 Analogue Mic / Line Input "I" card
- DL442 Analogue Output "O" card
- DL443 8 Analogue Line In and 8 Analogue Line Out "TRS" card
- DL452 AES/EBU Input and Output "D" card
- DL444 8 Analogue Mic In and 8 Analogue Line Out "D Sub" card

Accessories:

- KLARK TEKNIK DN9696 96 track High Resolution Audio Recorder
- KLARK TEKNIK DN9650 Network Bridge
  (MADI, Dante, Aviom, Ethersound, CobraNet)

Control Centre Weight and Dimensions:

Width 1875mm x Depth 1054.27mm (73.82" x 41.51") Weight: 159kg (350.53lbs)*
*weights are approximate and out of flight case

XL8 Live Performance System

Install

The Install Version of the XL8 Live Performance System has been especially configured to be cost effective for permanent installations. The I/O XLRs are replaced by high-density D-type connectors. Each of the four remote DL451 24 channel in and 24 channel out I/O boxes can be separately placed up to 100m from the stage router unit, which can itself be up to 500m from the control surface. The DL444 I/O cards in the DL451 frame each have 8 channels of remote controlled MIDAS mic pre with 2.5dB steps as well as 8 line level outputs.

This version is ideally suited to theatres, multi-purpose venues, house-of-worship (and touring applications where 5-way active mic split may not be required).

XL8 Install Configuration:

- Five "Daylight Visible" Screens with 3-way KVM switch
- 432 inputs and 432 outputs connectivity
- 112 primary inputs
- 12 VCAs
- 8 POPulation Groups
- 16 effects devices
- Up to 51 KLARK TEKNIK EQs with DN9331 Rapide control
- Configurable "Area B"
- 150m bi-directional 192+192 channel redundant fibre optic snake (max 500m)
- Local I/O: 1 x DL451 pre-configured with DL441 "I", DL442 "O" and DL452 "D" cards
- Stage I/O: 4 x DL451 pre-configured with DL444 "D Sub" cards
- 2 x DL461 Audio System Signal Router
- Control centre supplied in crate

Additional I/O Unit Options:

- DL251 48 in / 16 out fixed configuration I/O
- DL252 16 in / 48 out fixed configuration I/O
- DL351 Up to 64 in / 64 out configurable I/O (3 card slots)
- DL431 24 in 5 way split: fixed configuration I/O

I/O Card Options:

- DL441 Analogue Mic / Line Input "I" card
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- KLARK TEKNIK DN9696 96 track High Resolution Audio Recorder
- KLARK TEKNIK DN9650 Network Bridge
  (MADI, Dante, Aviom, Ethersound, CobraNet)

XL8 Variants

The prepackaged Touring and Install versions of the XL8 represent just two examples of I/O connectivity. The comprehensive and easy to use MIDAS networking allows for many variations of I/O type and connectivity and covers a wide range of system costs. Please contact your distributor to discuss other options.

Audio System Signal Router

MIDAS DL461

The DL461 is a 3U 19" rack unit, which performs the stage-to-console link using a single CAT-5e cable (under 100 metres) or fibre-optic link (up to 500 metres) for the XL8 with redundant backup links.

In addition to audio and control connections to the ten DSP modules it features ten AES50 connections for local I/O, as well as BNC and AES3 word clock interfaces and Ethernet tunnel. Dual DL461s are supplied with each XL8 system providing full network redundancy to both FoH and I/O units.

Overview:

- Two DL461s included in a XL8 Live Performance System
- Integrated open-architecture AES50 digital audio distribution
- Fully duplicated network for redundancy
- Up to 100 metres of dual redundant connectivity between hardware elements with CAT-5e
- Up to 500m of dual redundant connectivity between DL461 and control surface with optical fibre
- Automatic integral delay management system - audio outputs time and phase coherent
- Flexible, expandable hardware system
- Ethernet TCP-IP tunnel at 10Mbits/sec for third parties
- 3U

Audio System Engine

MIDAS DL471

The DL471 is a 1U 19" rack unit, which forms part of the XL8 modular DSP engine.

It features its own discrete power supply, AES50 and Ethernet interfaces, as well as a dual, ultra high-speed, contra-rotating and self healing data loop for direct processor to processor communications.

Each XL8 system includes ten DL471 units of which one is a redundant hot spare (n+1 resilience model).

Overview:

- Ten DL471s included in a XL8 Live Performance System
- Dual redundant AES50 ports
- Dual redundant Ethernet ports
- Advanced FPGA architecture
- 4.8 Gigaflops of processing power per DL471
- 1U

PRO Series Introduction

The MIDAS PRO Series Live Audio Systems employs technology developed from the class-leading XL8, offering the same exemplary sample - synchronised audio performance. The PRO series can provide up to 104 simultaneous input processing channels and up to 35 discrete mixes in monitor mode, all of which feature EQ and a choice of dynamics processing options. By adding additional I/O hardware the PRO3, 6 and 9 network can be expanded to 288 inputs x 294 outputs, whilst the PRO2 and PRO2C expands to 156 inputs x 166 outputs and the PRO1 up to 100 inputs x 102 outputs, with point-to-point routing anywhere within the network which can then be patched and routed on a scene-by-scene basis via a powerful snapshot automation system.

The PRO series effects and dynamics algorithms are more than superb quality, easy-to use SHARC-based effects processing. They are incorporated within the automatic delay management system, so that wherever they are patched, the audio will be absolutely phase-coherent when summed into your mix. It is possible to assign up to 36 1/3 octave KLARK TEKNIK DN370 graphic EQs, for demanding monitor applications, all of which can be controlled using the optional KLARK TEKNIK DN9331 Rapide moving fader remote. All of this in addition to the four types of compression available on inputs, and five types on outputs. FX options, configurations, settings and patching can change completely with each scene recall. The possibilities are almost endless.

Reliability is designed into all MIDAS products, and all PRO Series, apart from PRO1, feature redundant power supplies as standard. The FPGA processing engine on the PRO3, 6 and 9 is of modular construction, with the option of a spare module which will automatically deploy in the event of an engine module failure (n+1 model). Due to its modular configuration the DSP engines of both the PRO3 and PRO6 can be loaded and upgraded to PRO9 specification.

PRO Series digital audio transport uses the international AES50 standard, featuring feed-forward error correction which provides superior protection against lost data packets and synchronization issues when compared to other Ethernet cable based systems. All links between PRO series hardware elements support redundant cables for copper and optical options are available on the PRO3, PRO6 and PRO9.

The Control Centre for the PRO3, 6 and 9 houses dual redundant Linux master control computers (MCs), both running full versions of the relevant PRO Series Linux software. Either MC is capable of running the entire system on its own and control can be switched between the two without any loss of audio.

Overview:

- "Daylight Visible":
  Dual Screens with 3-way KVM switch on the PRO3, 6 and 9
  Single Screen on PRO1, PRO2 and PRO2C with DVI out
- XL8-Style "Fast Zones"
- XL8-Style Dual Operator "Channel Strips" for PRO3, 6 and 9
- VCAs:
  10 on PRO3, 6 and 9
  8 on PRO1, PRO2 and PRO2C
- 6 POPulation Groups
- Configurable "Area B" except on PRO1
- Surround panning including 5.1, Quad and LCRS
- Dual-Redundant Linux Control Computers on PRO3, 6 and 9
- AES50 on the Control Centre for I/O expansion and XL8 connectivity:
  3 ports for PRO1, PRO3, 6 and 9
  6 ports for PRO2 and PRO2C
- 8 AES50 ports on stage end of snake for I/O expansion on the PRO3, 6 and 9
- Up to 24 configurable inputs and 24 configurable outputs on the Control Centre on PRO3, 6 and 9 (Dependant on I/O card options fitted)
- Redundant hot swappable power supplies:
  3 on PRO3, 6 and 9
  2 on PRO2 and PRO2C
- Three year factory warranty

Accessories:

- KLARK TEKNIK DN9331 Rapide Graphic Controller
- KLARK TEKNIK DN9696 96 track High Resolution Audio Recorder
- KLARK TEKNIK DN9650 Network Bridge
  (MADI, Dante, Aviom, Ethersound, CobraNet)

PRO 9

PRO9 Live Audio System

The MIDAS PRO9 sits at the top of the MIDAS large format PRO Series, featuring a massive 88 channel input count and 35 busses, with the dual stage boxes offering placement flexibility up to 200m apart and 500m from the FOH position.

The PRO9 benefits from the full range of MIDAS I/O box options, including the DL251 fixed format stage box, the highly acclaimed DL431 24 channel 5-way mic splitter offering three mic preamps per channel and dual digital network connections, both with full redundancy. Flexibility can be further increased by adding the KLARK TEKNIK DN9650 digital format converter offering MADI and Dante connectivity.

The MIDAS PRO9 comes complete with the features that have been made popular by established MIDAS digital systems, the XL8 and the PRO6. This includes the hugely successful VCA and POPulation groups, which allow users to navigate channels intuitively, without the confusion caused by layers or pages of faders. It features the legendary and much-loved MIDAS sound characteristics, which have their roots in the classic MIDAS analogue consoles. The PRO9 also benefits from the same comprehensive choice of effects and dynamics processing as the PRO6 and XL8, including the acclaimed XL8 compressor styles. Expandable connectivity means the system can be upgraded to meet any applications.

PRO9 Configuration:

- 288 inputs x 294 outputs (max capacity) point-to-point routing anywhere within the Network
- 80 primary inputs
- 8 return inputs
- Up to 104 simultaneous mix channels
- 16 Group/Aux & 16 Matrix - 32 Mixes in "monitor" mode
- 35 mix busses
- 10 VCAs
- 6 POPulation Groups
- 8 Effects devices
- Up to 36 KT Graphic EQ's - with optional DN9331 Rapide control
- Configurable "Area B"
- Surface I/O (3 configurable card slots): DL443 "TRS" card
  DL452 AES/EBU Input and Output "D" card
  DL442 Analogue Output "O" card
- Stage I/O: DL351 56 in / 8 out configurable I/O (8 card slots)
  DL451 24 in configurable I/O (3 card slots)
- Dual-Redundant HyperMac (192x192) CAT5-e digital snake included
- Fibre Optic connections
- Control centre supplied in flight case
- 16U flight case supplied for DL371 DSP and DL351 I/O**

Additional I/O Unit Options:

- DL431 24 in 5 way split: fixed configuration I/O
- DL251 48 in / 16 out fixed configuration I/O
- DL252 16 in / 48 out fixed configuration I/O

I/O Card Options:

- DL441 Analogue Mic / Line Input "I" card
- DL442 Analogue Output "O" card
- DL443 8 Analogue Line In and 8 Analogue Line Out "TRS" card
- DL452 AES/EBU Input and Output "D" card
- DL444 8 Analogue Mic In and 8 Analogue Line Out "D Sub" card

- Option of 150m Fibre Optic cable

Control Centre Weight and Dimensions:

Width 1365mm x Depth 924mm (53.7" x 36.4") Weight: 97Kg (213.4lbs)*

*weights are approximate and out of flight case ** Packing may vary by territory

Accessories:

- KLARK TEKNIK DN9331 Rapide Graphic Controller
- KLARK TEKNIK DN9696 96 track High Resolution Audio Recorder
- KLARK TEKNIK DN9650 Network Bridge
  (MADI, Dante, Aviom, Ethersound, CobraNet)

PRO 6

PRO6 Live Audio System

The MIDAS PRO6 is at the heart of the large format PRO Series Live Audio Systems. The PRO6 can provide up to 64 simultaneous input processing channels and up to 35 discrete mixes in monitor mode, all of which feature MIDAS EQ and a choice of many dynamics processing options. By adding additional I/O hardware the PRO6's network can be expanded up to 288 inputs and 294 outputs. These connections can be patched and routed on a scene-by-scene basis, by use of the PRO6's powerful snapshot automation.

As with all the PRO Series the PRO6 benefits from the mix and match of all the MIDAS I/O box options, from the fixed configuration DL251 stage box to the highly acclaimed DL431 24 channel 5-way mic splitter. Flexibility can be further increased by adding the KLARK TEKNIK DN9650 digital format converter offering MADI and Dante connectivity.

Users can navigate the channels intuitively without resorting to layers with the aid of MIDAS' VCA and POPulation groups. It naturally features the legendary and much-loved MIDAS sound characteristics with comprehensive choice of effects and dynamics processing, including the much-acclaimed XL8 compressor styles.

The PRO6 can to the fully-loaded at a later date to an 88-channel PRO9 with additional hardware and firmware upgrades.

PRO6 Configuration:

- 288 inputs x 294 outputs (max capacity) point-to-point routing anywhere within the Network
- 56 primary inputs
- 8 return inputs
- Up to 80 simultaneous mix channels
- 16 Group/Aux & 16 Matrix - 32 Mixes in "monitor" mode
- 35 mix busses
- 10 VCAs
- 6 POPulation Groups
- 8 Effects devices
- Up to 36 KT Graphic EQ's - with optional DN9331 Rapide control
- Configurable "Area B"
- Surface I/O (3 configurable card slots): DL443 "TRS" card
  DL452 AES/EBU Input and Output "D" card
  DL442 Analogue Output "O" card
- Stage I/O: DL351 56 in / 8 out configurable I/O (8 card slots)
- Dual-Redundant HyperMac (192x192) CAT5-e digital snake included
- Fibre Optic connections for optional maximum 500 metre snake
- Control centre supplied in flight case
- 16U flight case supplied for DL371 DSP and DL351 I/O**

Additional I/O Unit Options:

- DL431 24 in 5 way split: fixed configuration I/O
- DL251 48 in / 16 out fixed configuration I/O
- DL252 16 in / 48 out fixed configuration I/O
- DL451 Up to 24 in / 24 out configurable I/O (3 card slots)

I/O Card Options:

- DL441 Analogue Mic / Line Input "I" card
- DL442 Analogue Output "O" card
- DL443 8 Analogue Line In and 8 Analogue Line Out "TRS" card
- DL452 AES/EBU Input and Output "D" card
- DL444 8 Analogue Mic In and 8 Analogue Line Out "D Sub" card

- Option of 150m Fibre Optic cable

Control Centre Weight and Dimensions:

Width 1365mm x Depth 924mm (53.7" x 36.4") Weight: 97Kg (213.4lbs)*
*weights are approximate and out of flight case ** Packing may vary by territory

Accessories:

- KLARK TEKNIK DN9331 Rapide Graphic Controller
- KLARK TEKNIK DN9696 96 track High Resolution Audio Recorder
- KLARK TEKNIK DN9650 Network Bridge
  (MADI, Dante, Aviom, Ethersound, CobraNet)

PRO

PRO3 Live Audio System

The MIDAS PRO3 Live Audio System provides entry to the PRO Series of consoles and will ensure that even more touring riders and professional installations can take advantage of MIDAS' digital features.

PRO3 naturally features the legendary and much-loved MIDAS sound characteristics, which have their roots in the classic MIDAS analogue consoles. It also includes the overwhelmingly successful VCA and POPulation groups, which allow users to navigate channels intuitively, without the hindrance of layers or pages of faders. It also benefits from the same comprehensive choice of effects and dynamics processing as the PRO6 and XL8, including the much-acclaimed XL8 compressor styles.

The PRO3 brings these features and more within reach of tighter budgets, offering 48 input channels with remote controlled mic pres, 27 busses and six stereo effects. At the heart of the PRO3 is the DL351 configurable, modular I/O unit offering the user a choice of 5 I/O cards. The PRO3 can be specified with a number of different I/O units from the Midas DL I/O range. However should investors require more connectivity over time, a simple and affordable upgrade path supersizes the system to the PRO6 or the fully-loaded, 88-channel PRO9 with additional hardware and firmware upgrades.

PRO3 Configuration:

- 288 inputs x 294 outputs (max capacity) point-to-point routing anywhere within the Network
- 48 primary inputs
- 8 return inputs
- Up to 72 simultaneous mix channels
- 16 Group/Aux & 8 Matrix - 24 Mixes in "monitor" mode
- 27 mix busses
- 10 VCAs
- 6 POPulation Groups
- 6 Effects devices
- Up to 28 KT Graphic EQ's - with optional DN9331 Rapide control
- Configurable "Area B"
- Standard surface I/O(3 configurable card slots): DL443 "TRS" card
  Plus 2 expansion slots
- Stage I/O: DL351 Up to 64 in / 64 out configurable I/O
- Dual-Redundant HyperMac (192x192) CAT5-e digital snake included
- Fibre Optic connections for optional maximum 500 metre snake
- Control centre supplied in flight case
- 16U flight case supplied for DL371 DSP and DL351 I/O**

Additional I/O Unit Options:

- DL431 24 in 5 way split: fixed configuration I/O
- DL351 Up to 64 in / 64 out configurable I/O
- DL251 48 in / 16 out fixed configuration
- DL252 16 in / 48 out fixed configuration I/O
- DL451 Up to 24 in / 24 out configurable I/O

I/O Cards Options:

- DL441 Analogue Mic / Line Input "I" card
- DL442 Analogue Output "O" card
- DL443 8 Analogue Line In and 8 Analogue Line Out "TRS" card
- DL452 AES/EBU Input and Output "D" card
- DL444 8 Analogue Mic In and 8 Analogue Line Out "D Sub" card
- Option of 150m Fibre Optic cable

Control Centre Weight and Dimensions:

Width 1365mm x Depth 924mm (53.7" x 36.4") Weight: 97Kg (213.4lbs)

*weights are approximate and out of flight case ** Packing may vary by territory

Packaging Options:

- Control centre flight case
- 16U flight case for DL371 DSP and I/O

Accessories:

- KLARK TEKNIK DN9331 Rapide Graphic Controller
- KLARK TEKNIK DN9696 96 track High Resolution Audio Recorder
- KLARK TEKNIK DN9650 Network Bridge
  (MADI, Dante, Aviom, Ethersound, CobraNet)

PRO2 / PRO2C Live Audio System

Think of an audio mixing system which offers unprecedented levels of control integration in terms of speed and ease of workflow. Think of an audio mixing system which has the most intuitive, operator-driven user-interface yet imagined, yet costs no more than an ordinary console. Think of an audio mixing system which has all of this, and sounds like a MIDAS. Think of the MIDAS PRO2 - Radical thinking – It's simple!

The MIDAS PRO2 and PRO2C may be the smallest and least expensive MIDAS digital consoles so far; however, they represent a quantum leap forward in both technology and in concept for the art of audio mixing.

PRO2 can be operated in a number of different ways, depending upon the experience, ability and willingness of the operator to adopt new ideas. In "normal" mode, PRO2 behaves in a manner similar to many other digital consoles. Engineers who are new to MIDAS digital can relax, enjoy the PRO2's sample-synchronous audio quality, and operate the console from well within their comfort zone. As an operator becomes increasingly familiar with the console, they can activate the advanced navigation features which enable access to undreamt of levels of ease and speed of workflow on an audio console. Digital or Analogue!

PRO2 is also available in minimum-footprint compact form, PRO2C. PRO2C is essentially the same mixer, the only difference being the physical size of the user interface. The PRO2C features all of the facilities of its larger sibling, yet this 64 channel mixer is no larger than many 24 channel analogue consoles.

PRO2 and PRO2C Configuration:

- 156 inputs x 166 outputs (max capacity) point-to-point routing anywhere within the Network
- 56 mic/line inputs with MIDAS mic preamps
- 64 simultaneous input processing channels
- 32 analogue outputs (including 2 stereo local monitor outputs)
- 3 AES3 outputs
- 2 AES3 inputs
- 27 sample-synchronous, phase-coherent mix busses
- 6 multi-channel FX engines
- Up to 28 KLARK TEKNIK DN370 31-band Graphic EQs
- Full-colour 15" daylight-viewable display screen
- 8 VCA (Variable Control Association) groups
- 6 POPulation groups
- 192 MCA (Mix Control Association) groups
- 96 kHz 40-bit floating-point processing throughout
- 100m di-directional Cat-5e AES50 digital snake included (48 in x 16 out)
- Stage I/O: DL251 48 in / 16 out fixed configuration

Additional I/O Unit Options:

- DL431 24 in 5 way split: fixed configuration I/O
- DL252 16 in / 48 out fixed configuration I/O
- DL351 Up to 64 in / 64 out configurable I/O (8 card slots)
- DL451 Up to 24 in / 24 out configurable I/O (3 card slots)

Control Centre Weight and Dimensions:

- PRO2 Width 1179.6mm x Depth 730.3mm (46.44" x 28.75") Weight: 46Kg (101.4lbs)
- PRO2C Width 882 mm x Depth 730.3mm (34.72" x 28.75") Weight: 37Kg (81.57lbs)

*weights are approximate and out of flight case

Accessories:

- KLARK TEKNIK DN9331 Rapide Graphic Controller
- KLARK TEKNIK DN9696 96 track High Resolution Audio Recorder
- KLARK TEKNIK DN9650 Network Bridge (MADI, Dante, Aviom, Ethersound, CobraNet)

Mic7
Mic8
PRO1

PRO1 Live Audio System

The PRO1 breaks new ground for MIDAS digital consoles, featuring an all-new, lightweight aluminium frame, PRO1 is the first stand-alone MIDAS digital console, and sets new standards of portability and performance for a "compact" digital console.

PRO1 is easy to configure and operate. Engineers who are new to MIDAS digital can relax, enjoy the PR01's sample-synchronous audio quality, and mix from well within their comfort zone.

Engineers familiar with MIDAS can just load their existing show-file straight into the PRO1, regardless of which MIDAS digital console it was created on, and carry on working.

In addition to the 40 primary input channels, PR01 features 8 aux returns, all of which feature 4-band MIDAS parametric EQ and insert points. These 8 aux returns can be used as returns for the PR01's internal FX processors, or as additional mic channels, if enough mic inputs are available on the network I/O hardware.

A total of 48 input channels have routing to 27 mix busses. These busses comprise 16 user-configurable aux busses, which can be mixes, subgroups or mix minus groups, and 8 matrix busses. The Matrix busses source from inputs, as well as groups, and so can be used as 8 additional auxes (monitor mix and FX sends) which provides a total of 24 mixes (plus L, R & Mono) for monitor mixing duties. All busses can be linked as stereo pairs (except the MONO buss).

As with all MIDAS digital consoles all audio paths can be routed to multiple destinations and the console format can be reconfigured live on a scene-by-scene basis.

PRO1 Configuration:

- 100 inputs x 102 outputs (max capacity) point-to-point routing anywhere within the Network
- 24 mic/line inputs with MIDAS mic preamps
- 48 simultaneous input processing channels
- 24 analogue outputs (including 2 stereo local monitor outputs)
- 3 AES3 outputs
- 2 AES3 inputs
- 27 sample-synchronous, phase-coherent mix busses
- Up to 12 multi-channel FX engines
- Up to 28 KLARK TEKNIK DN370 31-band Graphic EQs
- Full-colour 15" daylight-viewable display screen
- 8 VCA (Variable Control Association) groups
- 6 POPulation groups
- 96 kHz 40-bit floating-point processing throughout

Additional I/O Unit Options:

- DL431 24 in 5 way split: fixed configuration I/O
- DL251 48 in / 16 out fixed configuration I/O
- DL252 16 in / 48 out fixed configuration I/O
- DL351 Up to 64 in / 64 out configurable I/O (8 card slots)
- DL451 Up to 24 in / 24 out configurable I/O (3 card slots)

Control Centre Weight and Dimensions:

- PRO1 Width 685.20 mm x Depth 722.14mm (26.98" x 28.43") Weight: 21.5kg (47.5lbs)

  *weights are approximate and out of flight case

Accessories:

- KLARK TEKNIK DN9331 Rapide Graphic Controller
- KLARK TEKNIK DN9696 96 track High Resolution Audio Recorder
- KLARK TEKNIK DN9650 Network Bridge (MADI, Dante, Aviom, Ethersound, CobraNet)

Audio System Engine

MIDAS DL371

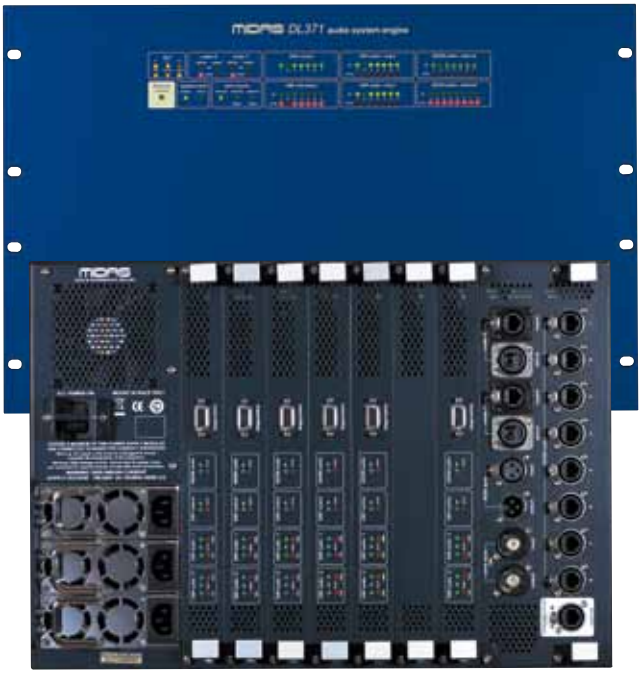
The PRO3, 6 and 9 processing engine is a 7U 19" rack mount unit, which houses up to 7 audio processing modules and routing hardware. Employing advanced FPGA architecture, it has three removable power supplies, only two of which are required for full operation. The power supplies are auto-voltage sensing, auto-switchover, hot-swappable, are fitted with locking AC connectors and are identical to, and therefore interchangeable with the PSU's in the PRO3, 6 and 9 Control Centre.

The engine has dual-redundant HyperMAC ports, both CAT-5e and optical, which provides the digital equivalent of a 384-way (192 in + 192 out) multi-core between the stage and FOH. There are also eight AES50 ports, which facilitate connections to the PRO Series DL351 stage box, and/or other AES50 I/O hardware. It is also possible to use any PRO Series with DL251, DL351, DL451 and DL431 plus the KLARK TEKNIK DN9696 Hi Resolution Audio Recorder and DN9650 Network Bridge.

The processing engine is loaded with 4 modules for a PRO3, 5 for a PRO6 and 6 for a PRO9 in the standard configuration, with an extra-cost option for an n+1 redundant spare module.

Overview:

- One DL371 included in a PRO Series Live Audio System
- N+1 PSU redundancy
- Dual redundant HyperMAC ports
- Eight AES50 ports
- Ethernet tunnel connection
- Word Clock and AES3 sync connections
- Advanced FPGA architecture
- Upgrade options for upgrading a PRO3 to a PRO6 or PRO9 and PRO6 to a PRO9
- 7U



Audio System Modular I/O

MIDAS DL351

The DL351 is a 7U 19" rack unit, can provide a maximum of 64 audio inputs and 64 audio outputs. It has the same user-configurable card format as the DL451 but has the capacity to house up to 8 cards, which can be any combination of 8 analogue mic/line in, 8 analogue out (XLR), 8 analogue TRS line level in and out, 8 digital in and out (4 AES/EBU pairs) or a 25 pin D sub card with 8 analogue mic/line inputs and 8 outputs.

Midi in, out and thru, and GPIO connections are supplied as standard. Digital audio interface is via 4 AES50 ports, one of which can be configured as a spare redundant connection. Dual redundant power supplies with locking IEC connectors are fitted as standard.

The DL351 can be used with the MIDAS XL8 and PRO Series of digital mixing systems, or as a stand-alone AES50 audio interface in a MIDAS snake and audio distribution system with remote control via Ethernet.

Overview:

- 64 audio inputs*
- 64 audio outputs*
- 8 card slots
- Five card options of
  DL441 Analogue Mic / Line Input "I" card
  DL442 Analogue Output "O" card
  DL443 8 Analogue Line In and 8 Analogue Line Out "TRS" card
  DL452 AES/EBU Input and Output "D" card
  DL444 "D Sub" card, 8 analogue mic/line in, 8 line out
- Midi in, out and thru
- GPIO
- Digital snake and distribution network component with redundant connections
- Ethernet control port
- 7U

* depending upon card configuration

Audio System Modular I/O

MIDAS DL451

The DL451 is a 3U 19" rack unit, which provides a maximum of 24 audio inputs and 24 audio outputs. It has the same user-configurable card format as the DL351 but has the capacity to house up to 3 cards, which can be any combination of 8 analogue mic/line in, 8 analogue out (XLR), 8 analogue TRS line level in and out, 8 digital in and out (4 AES/EBU pairs) or a 25 pin D sub card with 8 analogue mic/line inputs and 8 outputs.

Midi in, out and thru, and GPIO connections are supplied as standard. Digital audio interface is via 2 AES50 ports, one of which can be configured as a spare redundant connection.

The DL451 can be used with the MIDAS XL8 and PRO series of digital mixing systems, or as a stand-alone AES50 audio interface in a MIDAS snake and audio distribution systems with remote control via Ethernet.

Overview:

- 24 audio inputs*
- 24 audio outputs*
- 3 card slots
- Five card options of
  DL441 Analogue Mic / Line Input "I" card
  DL442 Analogue Output "O" card
  DL443 8 Analogue Line In and 8 Analogue Line Out "TRS" card
  DL452 AES/EBU Input and Output "D" card
  DL444 "D Sub" card, 8 analogue mic/line in, 8 line out
- Midi in, out and thru
- GPIO
- Digital snake and distribution network component with redundant connections
- Ethernet control port
- 3U

* depending upon card configuration

Audio System Modular I/O

MIDAS DL I/O Card Options

Audio connections on analogue consoles are comparatively inexpensive, a mixing console will have as many insert points and direct outputs as there are input channels. Not so with digital mixing consoles.

Insert points and direct outputs require A-D and D-A converters, as well as physical connections, so most manufacturers limit the number of these to a mere handful of options. One advantage of MIDAS' network approach to digital mixing is that the number and configuration of I/O's can be easily expanded for complex applications, but easily streamlined for less demanding, more straightforward duties.

The modular construction of the I/O system means that the right number and correct type of connections are always available, and always in the right location. MIDAS modular I/O cards are interchangeable between different hardware housings and all feature MIDAS audio performance and reliability, plus some extended usability features such as the connection locator LED found on all XLR I/O cards.

DL441 Analogue Mic / Line Input "I" card: for DL451, DL351 and PRO3, 6 and 9 surface

- 8 analogue mic / line inputs featuring premium quality remote control MIDAS mic pre's
- With +48 V and "check" remote indicators
- Ultra-low latency 24-bit 96 kHz A-D convertors

DL442 Analogue Output "O" card: for DL451, DL351 and PRO3, 6 and 9 surface

- 8 analogue XLR outputs with "no audio" mute and remote "check" LEDs
- High current drive capability for long cable runs
- Ultra-low latency 24-bit 96 kHz D-A convertors

DL443 8 Analogue Line In and 8 Analogue Line Out "TRS" card: for DL451, DL351 and PRO3, 6 and 9 surface

- 8 line level inputs and 8 outputs in a single card form factor
- All balanced TRS sockets
- Outputs feature "no audio" mute LEDs

DL452 AES/EBU Input and Output "D" card: for DL451, DL351 and PRO3, 6 and 9 surface

- 8 inputs and 8 outputs in a single card form factor on 4 AES / EBU in / out pairs
- Inputs feature sample rate converters and sync to external clock
- Outputs feature sample rate converters, selectable word length and choice of clock (internal 96 kHz or 48 kHz or external)

DL444 "D Sub" card: for DL451, DL351 and PRO3, 6 and 9 surface

- 8 inputs and 8 outputs in a single card form factor
- 25-pin "D" sub connectors for inputs, outputs, and remote +48 V and "check" LEDs
- Mic / line inputs feature premium quality remote control MIDAS mic pres with +48 V and "check" remote indicators
- Outputs are balanced with high current drive capability for long cable runs
- Ultra-low latency 24-bit 96 kHz A-D and D-A convertors

Audio System Fixed Format I/O

MIDAS DL251

The DL251 is a 5U fixed configuration I/O unit with 48 mic/line inputs and 16 mic/line outputs. The DL251 is limited to analogue connections and provides a more cost-effective solution for those not requiring the flexibility of MIDAS modular I/O hardware.

MIDI in, out and thru and one Ethernet control port are fitted as standard. Three AES50 ports handle the (n+1) redundant digital audio interface. The DL251 is capable of being switched between 96 kHz and 48 kHz via a front panel switch. On the rear panel there is a MUTE all outputs button for on stage re-patching. The unit is also equipped with dual redundant PSUs.

Overview:

- 48 remote control mic/line audio inputs / 16 audio line outputs fixed configuration
- Switchable between 96 kHz and 48 kHz sample rates
- Midi out and thru
- Three AES50 ports
- Ethernet control port (using MIDAS protocols)
- Dual redundant PSUs
- Digital snake and distribution network component
- DL252 is a 48 audio outputs / 16 audio inputs configuration for snake applications
- 5U

Audio System Input Splitter

MIDAS DL431

The DL431 is a 6U 19" rack fixed configuration unit which features 24 mic / line inputs. Each input feeds three separate preamps, two with separate gain controls, the third being fixed gain.

The two variable-gain preamps feed separate ADCs which then pass 96 kHz digital audio to the AES50 ports. Four discrete AES50 outputs supply dual redundant digital audio to AES50 networks, and allow for easy connection to any AES50 device (e.g. HD recorder, Network Bridge or mixing console).

Two balanced analogue splits (sourced post each mic amp) are provided on the rear panel. The third, fixed gain, preamp feeds a transformer isolated split on the front panel for recording or broadcast applications. The two variable gain pre-amps are remote controllable from two separate locations e.g. FoH and Monitor positions. Front-panel controls and local monitoring with integral headphone amplifier also makes the DL431 usable as a stand-alone device. Integral dual-redundant power supplies ensure peace of mind at all times.

Overview:

- Front-panel control and local monitoring (can be used as a stand alone unit)
- Integral headphone amplifier
- Dual redundant PSUs
- Integrated three way analogue mic splits
- Four AES50 ports
- Digital snake and distribution network component
- 6U

iPad App
MIDAS Mixtender

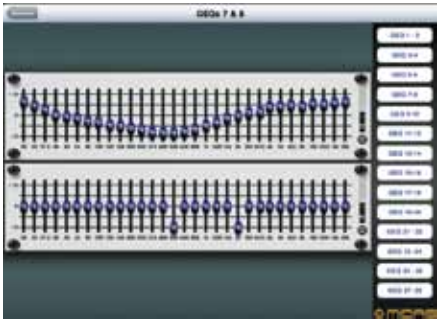
MIDAS' Mixtender iPad App provides wireless remote control for key functions of the MIDAS PRO Series and XL8 consoles. The App automatically selects the right console type so there is no difficult set-up procedure.

With the Mixtender you can monitor ALL input and output metering simultaneously in real time, and can remotely EQ any speaker mix with one of the console's on-board KT DN370 GEQs.

The Mixtender also provides simple, fast local stage mix adjustment by accessing the consoles' MCA (Mix Control Association). Multiple iPads can be used simultaneously and each one can be locked to a single mix, so artists can create their own monitor mixes without changing any other console settings.

The MIDAS Mixtender is free to download from Apple's App Store.

Overview



GEQ

MCA

VENICE F
VENICE F

Venice*F*

Venice*F* is much more than a compact live audio console. Venice*F* is the platform for a completely integrated audio mixing, recording and processing package.

At MIDAS, we know what it takes to design and build live sound consoles for the world's most demanding tours and installations. One look at the Venice*F* confirms that this console is continuing the legacy established by the groundbreaking XL3 and XL4 consoles, then consolidated in the industry-leading Heritage series.

From the Venice*F*'s horizontal fader panel, through the class-leading parametric EQ filters, to the latest expression of that legendary MIDAS mic pre, this is a console without compromise. Professional features are apparent everywhere, some of which are unheard of on consoles of this modest footprint.

The hybrid Venice*F* bridges the gap between analogue and digital audio consoles, and offers the user the ease-of-use, warmth, feel, and zero-latency of analogue, combined with the power, choice and flexibility of outboard digital processing. Although specifically designed for live sound, the superb audio performance, and the addition of a FireWire digital audio interface mean that the Venice*F* is equally at home in recording and mix down applications. Many manufacturers cut quality when they design small mixers. At MIDAS we understand that a modest footprint doesn't have to mean compromised performance and a poor feature set. The Venice*F* embodies quality, from its rugged construction and top-of-the-range components through to the unmistakable MIDAS sound, it is obviously a truly professional audio console.

Venice*F*'s FireWire* interface can be used with any computer fitted with a 1394 port and is effectively a multichannel digital audio link. This connects directly to your computer and allows the use of third party audio processing software in conjunction with the console. Applications include multi-track recording from the Venice*F*s digital direct outputs, software-generated FX processors driven from aux sends or direct outputs, and your favourite "plug-ins" inserted on input channel FireWire send/returns. All with a heart of pure MIDAS.

Although the FireWire interface will work with nearly all computer-based audio processing software, included in every Venice*F* package is a free 60-day trial version of REASON, by Propellerhead. This software suite includes multi-track recording, virtual racks full of FX and dynamics processing, and even a software mixer, which can be patched in parallel with the analogue Venice*F* permitting full external digital processing of each Venice*F* input channel.

A-D and D-A conversion is achieved using techniques and advanced filter designs developed for the Industry-leading MIDAS XL8 digital mixing system. This ensures that the conversion process is transparent, and free from any undesirable digital artefacts - preserving that unmistakeable MIDAS sound right into the digital domain.

VENICE F16

Overview:

- Frames: 16, 24, 32 and 13U 16 channel rack mount
- Overload tolerant MIDAS mic pre with polarity switch, high pass filter and 20 dB pad
- Industry acclaimed 4 band swept MIDAS EQ with fully parametric hi-mid and lo-mid filters
- Up to 32 input / 32 output 24-Bit FireWire digital audio interface – flexible routing options include direct outputs and busses
- Analogue or FireWire input select switch for all mic channels allowing "virtual sound check" and record mix down
- 6 auxes with individual buss pre/post fade switching and routing to FireWire
- 7x2 matrix with stereo split switching and routing to FireWire
- Individual phantom power for each mic input (including stereo channels)
- Stereo channels have fully featured mic pre's with individual left and right gain control
- Analogue and FireWire direct outputs with pre/post EQ switching
- Discrete stereo master buss with individual routing to FireWire plus discrete mono master buss
- 4 audio subgroups with fader flip to auxes and routing to FireWire
- Highly efficient integral auto-ranging switch mode power supply
- Rugged, roadworthy, tour proven construction with 3 year warranty

Weights and Dimensions:

Venice*F* 16R:
8 mono plus 4 stereo. FireWire 16ch in / 16ch out
Height 13U (578.5mm) x Depth 245mm x Width 482mm (22.77" x 9.65" x 19")
Weight 18.5kg (40.78lbs)

Venice*F* 16:
8 mono plus 4 stereo. FireWire 16ch in / 16ch out
Height 286.28mm x Depth 669.3mm x Width 599mm (11.27" x 26.35" x 23.58")
Weight 23.5kg (51.80lbs)**

Venice*F* 24:
16 mono plus 4 stereo. FireWire 24ch in / 24ch out
Height 286.28mm x Depth 669.3mm x Width 801mm (11.27" x 26.35" x 31.53")
Weight 30.5kg (67.24lbs)**

Venice*F* 32:
24 mono plus 4 stereo. FireWire 32ch in / 32ch out
Height 286.28mm x Depth 669.3mm x Width 1007mm (11.27" x 26.35" x 39.64")
Weight 37.5kg (82.67lbs)**

* FireWire and the FireWire symbol are trademarks of Apple Inc., registered in the US and other countries. The FireWire logo is a trademark of Apple Inc.

** weights and dimensions are approximate and out of the flightcase

VENICE U
VENICE U
VENICE U

Venice*U*

At first glance, Venice*U* looks like a straightforward, easy-to-use analogue audio console. However, Venice*U* continues MIDAS' engineering concept of a hybrid mixer offering a fusion of both analogue and digital technology.

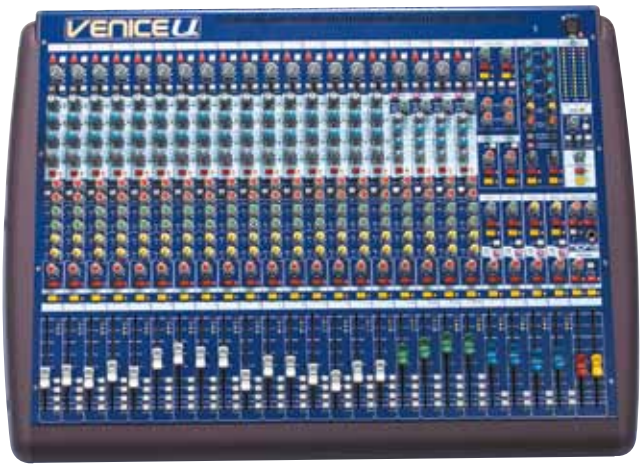
One look at the Venice*U* confirms that this console continues the legacy established by the ground-breaking MIDAS consoles which have been at the heart of so many historic live performances. From the Venice*U*'s class-leading EQ filters, to the latest expression of that legendary MIDAS mic pre, this is a console which compromises only on price.

The Venice*U*'s buss structure is identical to the larger Venice*F* - six aux sends, four groups, stereo masters, discrete mono buss and a 7 x 2 matrix. All buss outputs feature XLR connectors and insert capability. All six aux sends are switchable pre or post fade, and the two aux busses designated as monitor (fold back) sends are also switchable pre/post EQ on an individual channel basis.

The equaliser section features four bands of superb MIDAS EQ, with swept filters on all four bands, an EQ in/out switch and LED status indicator. Additional switch functions with LED status indication are mute and solo. Metering is provided by a highly accurate four element LED display.

Venice*U*'s USB audio interface combines the power and convenience of digital audio processing with the warmth and feel of an analogue audio mixer. The USB interface can be used with any computer fitted with a USB port, and is effectively a 16-channel (8 x 8) digital audio buss, which connects directly to your computer and enables the use of any 3rd party audio processing software in conjunction with the console.

All six aux busses, four subgroups, both matrix busses and the stereo masters route to the USB interface, up to eight busses at one time. Applications include multi-track recording from the Venice*U*'s digital buss outputs, and "plug-in" FX processors driven from aux sends and returned to the stereo channels' digital USB inputs - all with a heart of pure MIDAS.



VENICE

Overview:

- Frames: 16, 24, 32 (16 channel frame can be rack mounted in 11U)
- Overload tolerant MIDAS mic pre with polarity switch, high pass filter and 20 dB pad
- Individual phantom power for each mic input (including stereo channels)
- The equaliser section features four bands of MIDAS EQ, with swept filters on all four bands and an EQ in/out switch
- 8 input / 8 output USB digital audio interface – flexible routing options including six aux busses, four subgroups, both matrix busses and the stereo masters
- Analogue or USB input select switch on 4 stereo input channels allowing "plug-in" FX and multi-track record mix down
- 6 auxes with individual buss pre/post fade switching and routing to USB
- 7x2 matrix with stereo split switching and routing to USB
- Multi-function channels have fully featured mic pre's with individual left and right gain control
- Discrete stereo master buss with individual routing to USB plus discrete mono master buss
- 4 audio subgroups with fader flip to auxes and routing to USB
- Highly efficient integral auto-ranging switch mode power supply
- Rugged, roadworthy, tour proven construction with 3 year warranty

Weights and Dimensions:

Venice*U* 16:
Height 255mm/10.03" x Depth 577mm/22.71" x Width 552mm/21.72"
Weight 16kg/35.3lbs.**

Venice*U* 24:
Height 255mm/10.03" x Depth 577mm/22.71" x Width 760mm/29.92"
Weight 20kg/44.1lbs.**

Venice*U* 32:
Height 255mm/10.03" x Depth 577mm/22.71" x Width 961mm/37.83"
Weight 24kg/52.9lbs.**

** weights and dimensions are approximate and out of the flightcase

channel 8
clip
20
15k
low pass
40k
-40
1k
-12
signal
150
20dB
48V
PAD
Ø
high pass
400
96k
88.2k
48k
44.1k
int sync
ext sync
XL48
mic pre

XL48
Mic Pre

The XL48 packs eight classic MIDAS XL4 mic pres into the convenience of a 1U box, bringing the much-loved classic MIDAS mic preamp sound within the reach of live sound engineers everywhere.

The MIDAS XL48 comes complete with swept high and low pass filters, eight MIDAS XL8 A-D converters and a super-low-jitter 1ppm clock. Additional features include 8-segment LED input meters, individual phantom power, polarity invert, and -20 dB pad. All inputs are Neutrik XLR and 25-way D-sub connectivity.

The XL48 also features both analogue and digital outputs in ADAT and AES/EBU format. All five outputs can be used simultaneously, allowing the XL48 to perform as a multi-function analogue/digital mic splitter as well as adding the MIDAS touch to eight channels of a mix. Multiple clocking options are available, including external word clock, internal 96 k, 88.2 k, 48 k and 44.1 k.

Applications include mobile recording, analogue and/or digital splits between consoles, and upgrading other brand digital consoles with MIDAS mic pres and a reference-grade clock.

- Eight mic/line inputs featuring classic MIDAS XL4 mic pre amps
- Classic analogue MIDAS XL4 swept low and high pass filters
- Individual 48 V phantom power switching per channel
- Individual -20 dB pad switching per channel
- Individual polarity switching per channel
- High accuracy 8-segment LED meter per channel
- MIDAS XL8 ultra low latency 96 kHz 24-bit A-D converters
- Supports operation at 44.1 kHz, 48 kHz, 88.2 kHz and 96 kHz sampling frequencies
- Ultra low jitter reference-grade 1 part-per-million (1 ppm) temperature compensated clock oscillator with external Word clock syncing options
- Parallel fully balanced XLR and 25 W D-Sub input connections
- Driven and buffered fully balanced 25 W D-Sub output connections
- Dual AES3 25W D-Sub output connector
- Dual TOSLINK optical output connectors

Graphic Controller

KLARK TEKNIK DN9331 RapidE

The DN9331 is a 6U 19" rack unit and is the motorised fader remote control for the MIDAS digital onboard Graphic EQs. It connects using a single Ethernet cable and provides instant real-time control of all onboard assignable graphic equalisers, via the Solo Tracking System (STS).

A flexible user interface allows custom remote channel assignments across four banks of thirty two channel selection buttons. Four freely assignable group buttons and a global 'all channels' button allows relative adjustment of channels. This is especially important when the priority is to stop on-stage feedback first and determine the source second.

Overview:

- Simultaneous control of MIDAS digital onboard Graphic EQs and KLARK TEKNIK digital EQ units
- 4 banks of 32 channels
- 4 user configurable GEQ groups
- Global Mode
- Rack mounting or free standing
- Standard on XL8 Live Performance System
- 6U

High Resolution Audio Recorder
KLARK TEKNIK DN9696

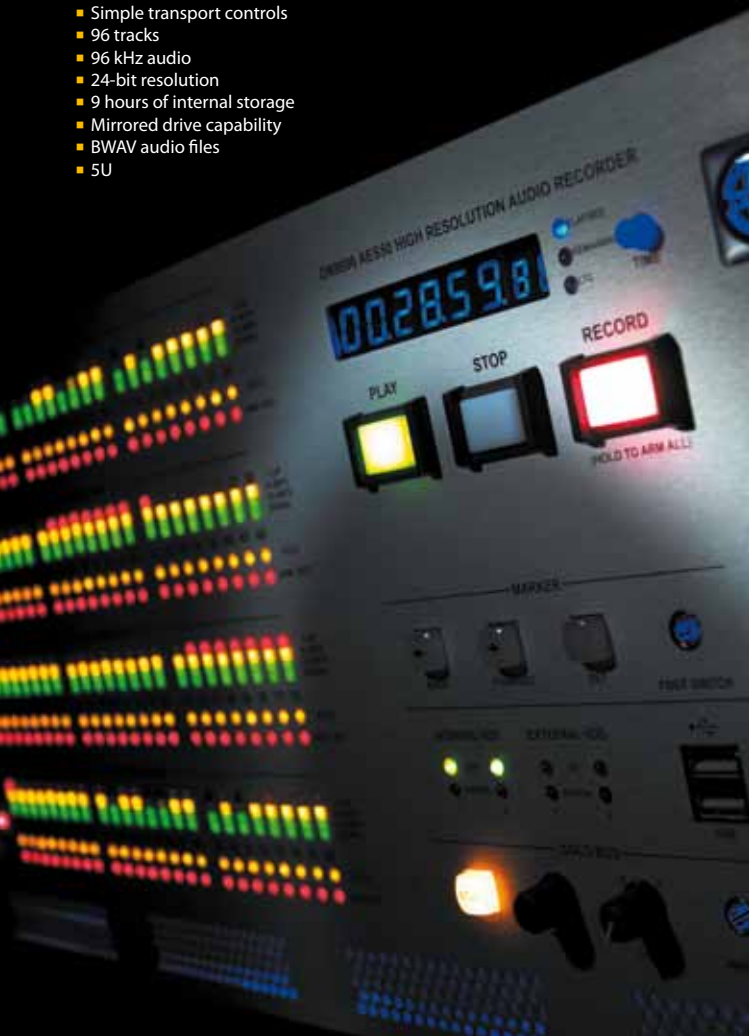
KLARK TEKNIK has engineered an extremely easy to use, simple to setup, standalone hard disk recorder - the DN9696. This High Resolution Audio Recorder offers 96 tracks of 96 kHz audio at 24-bit, with a massive 9 hours of internal storage. There is now no need for external computers linked to multiple non-roadworthy systems with complicated interconnections, just a simple plug and play unit with dedicated Play, Stop and Record front panel transport controls.

The screen based software interface offers in depth control of both recording and playback functions. There are echoes of the unique features of MIDAS' digital audio system within the DN9696, such as the use of POPulation groups to view, colour and edit tracks along with an 'Input Sheet' for quickly naming all tracks as well as 'dual operator' control of the system. These have all been designed to make the users life easier.

The DN9696 occupies only 5U of rack space with very simple cable requirements and does not demand the expense of a dedicated recording technician. With the addition of the DN9650 network bridge the DN9696 can be integrated into third party multichannel digital audio networks. After all, all you really need is Record, Stop and Play.

Overview:

- Simple transport controls
- 96 tracks
- 96 kHz audio
- 24-bit resolution
- 9 hours of internal storage
- Mirrored drive capability
- BWAV audio files
- 5U



KLARKTEKNIK
Klark Teknik
DN9650
DN9650 NETWORK BRIDGE
KLARKTEKNIK
Klark Teknik
DN9652
DN9652 DUAL NETWORK BRIDGE

Digital Audio Format Converters

KLARK TEKNIK DN9650 and DN9652

The DN9650 network bridge allows the AES50 interfaces on MIDAS XL8 and PRO Series digital audio systems, KLARK TEKNIK's DN9696 high resolution audio recorder and all MIDAS I/O units to connect to third party multichannel digital audio networks. Supported formats include MADI, Audinate* Dante, Aviom* A-Net, Cirrus Logic* Cobra Net and Digigram* EtherSound utilising network modules designed and manufactured by Lab X Technologies*, Audinate* and Cirrus Logic*.

The DN9652 dual network bridge replaces the AES50 connections with a slot for a second network module. This creates a unique product enabling conversion between many multi-channel digital audio formats, for example MADI to Dante or CobraNet to Ethersound. The DN9652 will find a myriad of uses solving all kinds of 'hard to fix' networking problems in a simple manner requiring little networking skill to deploy.

Both models include an astonishing 144 channels of high performance sample rate conversion and independent synchronisation for the two interfaces, including black burst, word clock and AES3. The minimal configuration requirements are simply set up using a standard web browser and an auto-configured Ethernet interface to the unit.

Overview:

- Units support
  AES50
  MADI
  Audinate Dante
  Aviom A-Net
  Cirrus Logic CobraNet
  Digigram EtherSound
- 144 Channels of high performance sample rate conversion
- Independent Synchronisation: including black burst, word clock and AES3
- Exemplary KLARK TEKNIK audio performance
- 1U

* All trademarks acknowledged.

AES50 OUT 2
AES50 OUT 1
PUSH
PUSH
KLARK TEKNIK
DN9610 AES50 REPEATER
POWER
+9V TO +18V DC 500mA

AES50 Repeater

KLARK TEKNIK DN9610

The KLARK TEKNIK DN9610 is a cost-effective solution for extending AES50 multichannel digital audio network connections (Cat 5e/Cat 6 cabling) to greater distances than previously achievable. Housed in a rugged, compact, alloy case, and enclosed in a shock-absorbing silicone sleeve, the DN9610 will fit almost anywhere, being no larger than many D.I boxes!

Each DN9610 is capable of extending two AES50 streams by up to 100m (330ft). Provision is made for dual redundant power supplies, with automatic, seamless recovery in the unlikely event of a power supply failure. Power supplies are multi-region and feature locking DC connectors to ensure against inadvertent disconnection.

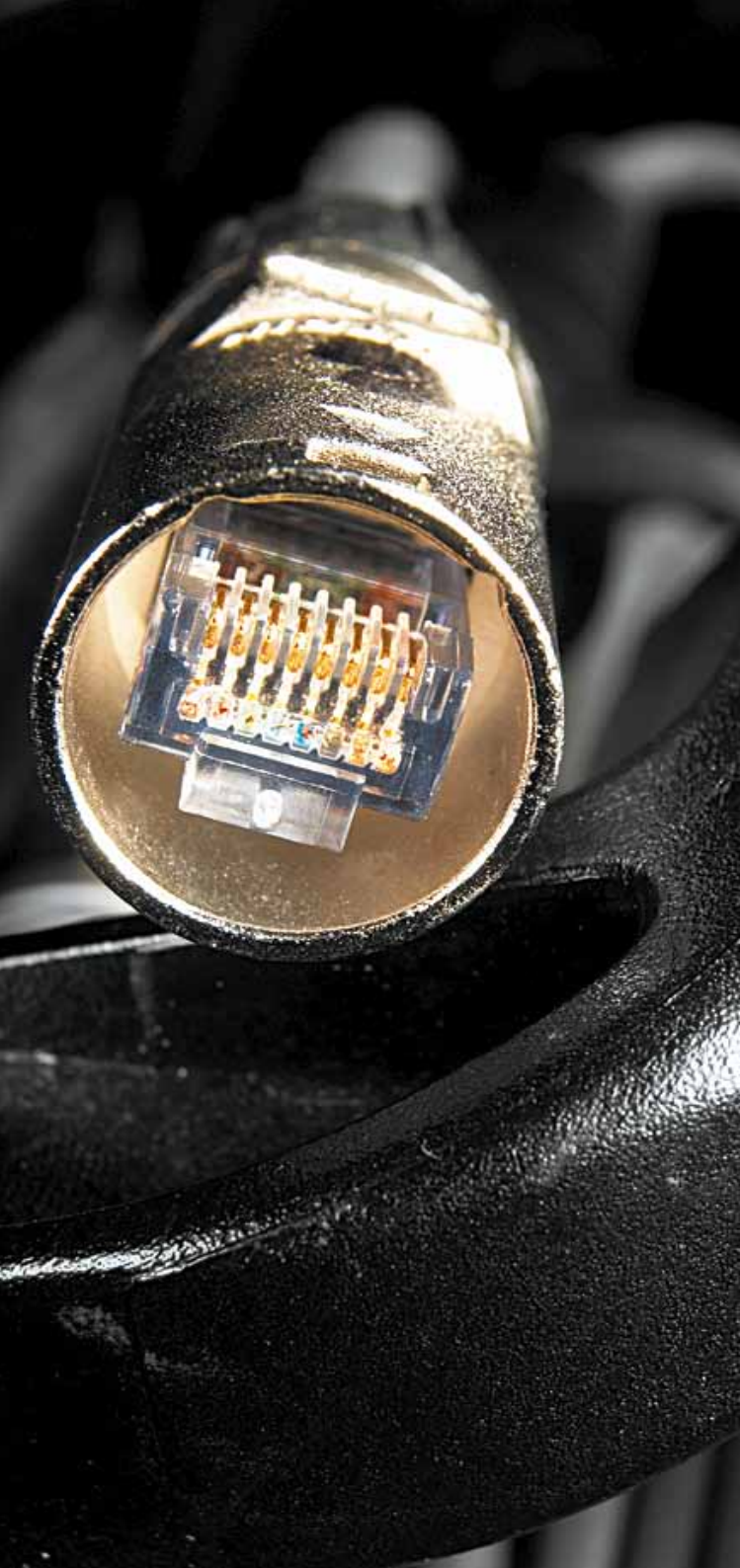
The DN9610 is capable of both 24-bit 48 kHz and 24-bit 96 kHz operation, and can operate its two AES50 streams at different clock rates simultaneously! Through-unit latency is an astounding 0.03ms. Multiple DN9610's can be connected in series, allowing transmission of AES50 over considerable distances.

Discrete LED status indicators are provided for power, AES50 input 1, AES50 input 2, AES50 output 1, and AES50 output 2. The four RJ-45 sockets are roadworthy Neutrik EtherCON connectors.

The DN9610 operates with ANY AES50-compliant devices.

Overview:

- AES50 repeater – extends 2 AES50 streams up to 100m (300ft)
- Supports both 24-bit 48 kHz and 24-bit 96 kHz operation
- 0.03ms latency
- Supports dual power supplies
- Shock-absorbing silicone sleeve



Digital Snakes and Audio Distribution

Traditionally microphones have been connected to mixing consoles by long multi-core cables. Over time, as sound systems have grown, the number of cores required and the number of cables needed to connect all parts of the sound system together (FOH, Monitors, Remote Truck etc.) have increased. This results in ever higher costs and lower performance. MIDAS digital snakes provide a solution to these problems.

Microphones tend to be reactive devices, that is, their sound is altered by load impedance. Long cable and multiple console connections load microphone outputs such that level is reduced and especially high frequency content is lost. Digital snakes eliminate the need for long analogue connections and MIDAS snakes have especially high input impedance to minimise losses at all frequencies. As a result microphones develop their full natural character and typically sound superbly smooth and open.

MIDAS Snakes have been created using I/O components developed for the MIDAS digital console range and as such feature all the sonic benefits produced by this latest generation of MIDAS mic preamplifiers. These are real world designs featuring RFI protection, high common mode rejection, high dynamic range and overload tolerance; and of course they sound fantastic, as MIDAS pre-amps always have.

High quality, oversampling A/Ds and D/As are carefully protected from digital overload (so you can drive them hard without the sound breaking up). They feed multichannel data streams that conform to the AES50 standard and provide bi-directional connectivity between I/O boxes. The physical cable connection only requires light weight, but rugged, CAT-5e cable rather than the bulky multi-core traditionally used in the past. Neutrik Ethercon connectors provide rugged locking connections. System latency is extremely low and the connections feature feed forward error correction and recovery systems plus the option of adding n+1 redundancy to protect from damage to any single cable. Additionally the digital signals are immune to the crosstalk and noise issues that plague passive multi-core systems.

All components use a default unity gain structure and analogue inputs readily accept line level signals with headroom and metering identical to MIDAS Analogue consoles. The mic pre's are controlled by an application on your PC that provides direct access to 24 channels at a time with all settings automatically stored to the snake hardware boxes (so you can disconnect or reconnect the controlling PC at any time while the system continues to operate normally). Full metering is available for inputs (and outputs) so to all intents and purposes using the digital snake is just like remoting your console mic pre directly to the stage, except now it's a MIDAS mic pre.

Models range from a 16in / 8 out system up to 64 in / 64 out channels with up to 3,000 metres range, and include an inexpensive 48 in / 16 out model. There is a choice of five road-rugged hardware options including the DL431 24-channel, 5-way active digital/analogue input splitter. Each of its 24 inputs features three MIDAS mic pres, completely isolated from each other to prevent any audio interaction. The DL351 64 channel and DL451 24 channel units support a range of five different I/O modules providing huge configuration flexibility. Options include the MIDAS remote controlled mic pres, line in/out on various connectors and AES3 digital audio with sample rate conversion and local synchronisation capability. The DL251 and DL252 provide a fixed-format, 48 in / 16 out, all-analogue remote stage box which feature MIDAS mic pre's and dual-redundant power supplies and snakes. Remote control of mic amp functions is achieved from any MIDAS digital system, or via a PC computer running the appropriate MIDAS software.

All the components are connected using standard CAT-5e cables carrying the AES50 multichannel audio and control protocol and provide a standard 100m range. This can be extended up to 3000m with the KLARK TEKNIK DN9650 network bridge in MADI mode.

MIDAS has invested heavily into the research and development of multi-channel high performance digital audio networking systems. The MIDAS network and input/output devices are already in regular use with the XL8 and PRO Series consoles in hundreds of locations worldwide every day.

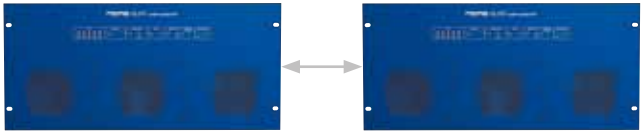
MIDAS has now made this technology available to everyone as part of a portfolio of products including digital snakes and digital audio distribution systems. MIDAS offers many configurations from an ultra-affordable 48/16 system to highly complex long distance multi location distribution and splitter systems. All MIDAS mic amp functions are fully remote controllable from PC based software with optional hardware controllers.

Digital snakes and audio distribution:

- All systems built from standard MIDAS I/O units
- AES50 network connections on rugged CAT-5e cable with Neutrik Ethercon connectors
- Ultra low and deterministic latency (in-ear compatible)
- Redundancy options available
- All systems are supplied with MIDAS PC-based remote control software
- PC connects to any unit via an Ethernet connection
- Hardware remote gain control option available

- Remote mic gain control
- Remote 48V switching
- Connector identify function
- 20 LED input and output metering
- 24 channels per page
- Rotary control hardware remote controller option
- Auto IP address setup
- Auto unit detect and identification

Entry level fixed format using one DL251 and one DL252 I/O unit:

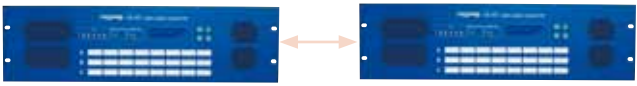


DL251 Stage Inputs/ Outputs (48x16)

DL252 FOH Inputs/ Outputs (16x48)

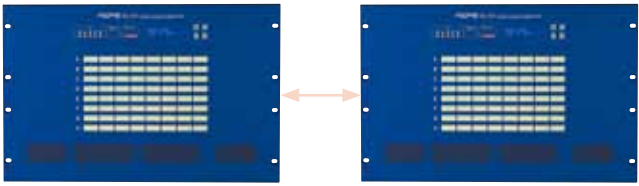
- 48 remote controlled MIDAS mic pres
- 16 line level returns
- 100m AES50 CAT-5e cable on reel
- 2nd redundant cable option
- Dual redundant power supplies on both units as standard
- 48 kHz sample rate

DL351/DL451 flexible configurations:



Stage Inputs/ Outputs (24x24 max)

FoH Inputs/ Outputs (24x24 max)



Stage Inputs / Outputs (64x64 max)

FoH Inputs / Outputs (64x64 max)

- DL451 max 24 channel bi-directional, 3 I/O cards
- DL351 max 64 channel bi-directional, 8 I/O cards
- 5 I/O card options including mic, line, AES/EBU
- 100m AES50 CAT-5e cables on reels
- Redundant cable options
- DL351 has redundant power supplies as standard
- 96 kHz sample rate
- DN9650 interface to MADI, Dante, Aviom, Ethersound and Cobranet

Splitter snakes and audio distribution products:

- All systems built from standard MIDAS I/O units
- AES50 network connections on rugged CAT-5e cable with Neutrik Ethercon connectors
- Redundancy options available
- All systems are supplied with MIDAS PC-based remote control software
- Two independent MIDAS mic pres separately controlled from each end point
- Analogue fixed gain transformer isolated output
- PC connects to any unit by Ethernet (auto IP addressing)
- Hardware remote gain control option available

Example 1:
24 channel dual remote end

- DL431 24 channel MIC splitter with twin remote controlled mic pres at stage end
- Dual AES50 digital links up to 100m each
- Dual 24 channel line or AES/EBU output units at e.g FOH and broadcast truck
- Three additional analogue split outputs: e.g to feed a monitor console
- Redundancy options

DL431

Example 2:
48 mic, 16 return, up to 3km

- Dual DL431 24 channel MIC splitter with two independent remote controlled MIDAS mic pres per channel at stage end
- DL451 with line out modules for returns
- DL351 48 mic out and 16 returns at remote 1 position
- Twin DN9650 units with MADI option providing the 48 mic signals up to 3km away at remote 2 position with line outs from DL351
- Redundancy options

DL451

DL431

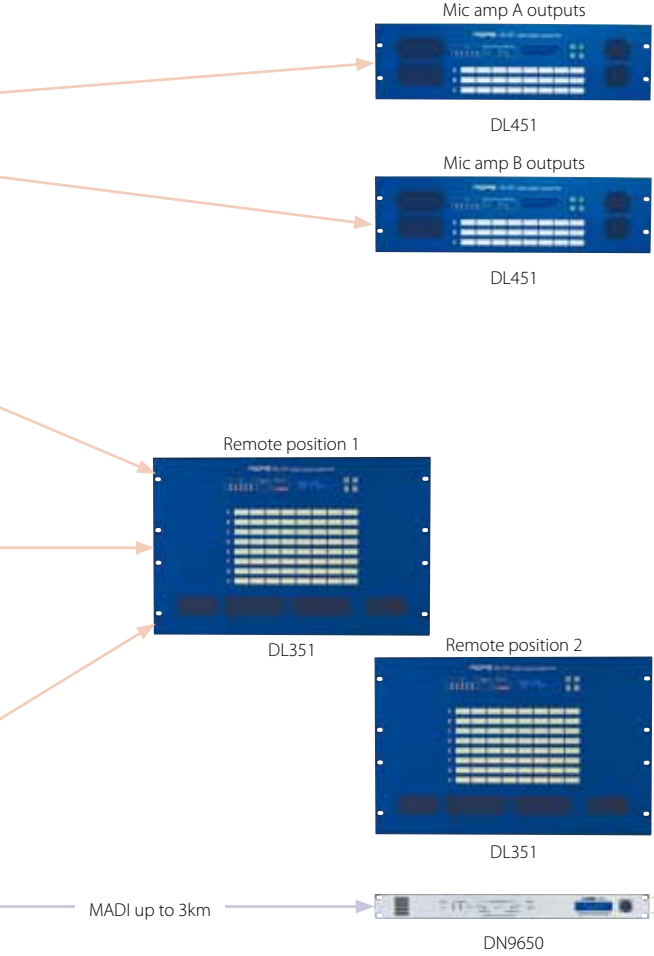
DL431

DN9650

Example 3:
64 MIDAS mic pres to 3rd party systems with MADI, Dante or other inputs

DL351

DN9650


Mic amp A outputs
DL451
Mic amp B outputs
DL451
Remote position 1
DL351
Remote position 2
DL351
MADI up to 3km
DN9650
MADI up to 3km
Third party unit e.g recorder with MADI input

WALTER NASH ROAD,
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WORCESTERSHIRE.
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ENGLAND.
TEL:+44 1562 741515
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midasconsoles.com

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